ive in the production of oogonia. Sucrose is probably not used by species of *Saprolegnia* or *Achlya*. Phosphates in the culture solution tend to increase the reproductive capacity of the fungus.—J. M. C.

Life forms of New York vegetation.—RAUNKIAER has devised a method of classifying plants according to the way in which they pass the unfavorable season of the year, and by means of a numerical arrangement of these forms, known as a "biological spectrum," the flora of one region may be compared with that of the world as a whole. This journal has commented favorably upon these methods,[24] but they have been neglected by American workers as a whole. It is therefore pleasing to see them applied by TAYLOR[25] to the flora of New York. From the very nature of such investigations, the results will be more significant and valuable as a larger number of similar studies are made. Compared with the normal spectrum, the New York flora is higher in percentages of aquatics, geophytes, and hemicryptophytes, and somewhat lower in percentages of chamaephytes and phanerophytes. No other area to which this method of analysis has been applied has shown such an abundance of deep-rooted perennials of the bulb and rootstock type, here termed geophytes. This is to be correlated with and is partly explained by the large proportion of monocotyledons in the portion of the pine barrens included in the area studied. TAYLOR points out that were it possible to base the spectra upon a census of individuals rather than one of species, different and probably more significant comparisons would result.—GEO. D. FULLER.

Disease resistance.—JONES and GILMAN[26] have published a very suggestive bulletin upon the control of the cabbage disease known as "yellows," caused by the soil fungus *Fusarium conglutinans*. It seems that on badly infected or cabbage-sick soil the loss ordinarily ranges from 50 to 95 per cent. Experimental work through five summers seems to justify the conclusion that no method of soil, seed, or crop treatment offers any hope for the control of the disease. On the other hand, the development of disease-resistant varieties by selection has given such promising results that "full reliance can be placed in it as a feasible method for the practical control of this malady." Control of various commercial varieties of cabbage showed that there are marked differences in susceptibility among them, and advantage is taken of this fact to discover a *Fusarium*-resistant strain. The method employed has been based on the observation that even in the worst diseased fields in the autumn there are occasional sound heads, and these have been selected for pedigree culture.

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[24] BOT. GAZ. **44**:393. 1907; **51**:309–310. 1911.

[25] TAYLOR, NORMAN, The growth forms of the flora of New York and vicinity. Amer. Jour. Bot. **2**:23–31. 1915.

[26] JONES, L. R., and GILMAN, J. C., The control of cabbage yellows through disease resistance. Agric. Exp. Sta. Univ. Wisconsin Bull. 38. pp. 70. *figs. 23*. 1915.

The results of this work have been so convincing that the cultivation of disease-resistant strains of our crop plants promises to be the final method of eliminating disease.—J. M. C.

Ascospore expulsion of Endothia.—HEALD and STUDHALTER[27] have published the results of an investigation of the chestnut blight fungus, which uncovers a very interesting situation. There is a remarkably prolonged perithecial activity, due, partly at least, to three important features in the development of the fungus. The asci mature successively through quite an extended period, the perithecia mature successively in a given stroma, and the stromata mature successively throughout the season. The practical result is that ascospores are available for expulsion at any time when the conditions favor. Expulsion "begins in the spring with the first warm rains, and increases to a maximum of activity as conditions become more favorable, to be followed by a decline in the fall when lower temperatures prevail, and ceases entirely during the cooler portions of the year."—J. M. C.

Carpophores of pore fungi.—ZELLER[28] has studied the development of the carpophores of *Ceriomyces Zelleri*, one of the pore fungi. He discovers that in this development there is a homogenous mass of tissue which is differentiated simultaneously into pileus and stipe by a cleavage plane which gives rise to an annular furrow, and that the hymenium, which is exogenous in origin, is formed in the roof of a furrow. This form proves to be gymnocarpic, since there is no marginal veil.—J. M. C.

Morphology of Agaricus.—ATKINSON[29] has described in great detail the development of *Agaricus Rodmani*, a species described by PECK in 1885. The four features which he considers are (1) the duplex character of the annulus, (2) the origin of the hymenophore fundament, (3) the differentiation of parts in the primordial ground tissue, and (4) the origin and development of the lamellae. The paper must be referred to for the numerous details involved.—J. M. C.

New species of rust.—In working over cultures of rusts in connection with their presentation in the *North American Flora*, ARTHUR and FROMME[30] have discovered and described 7 new species in *Uromyces* (2), *Puccinia* (4), and *Uredo*.—J. M. C.

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[27] HEALD, F. D., and STUDHALTER, R. A., Seasonal duration of ascospore expulsion of *Endothia parasitica*. Amer. Jour. Bot. **2**:429–448. *figs. 6.* 1915.

[28] ZELLER, SANFORD M., The development of the carpophores of *Ceriomyces Zelleri*. Mycologia **6**:235–239. *pls. 140, 141. figs. 12.* 1914.

[29] ATKINSON, GEO. F., Morphology and development of *Agaricus Rodmani*. Proc. Amer. Phil. Soc. **54**:309–343. *pls. 7–13.* 1915.

[30] ARTHUR, J. C., and FROMME, F. D., New species of grass rusts. Torreya **15**: 260–265. 1915.